PHILIP MORRIS
U.S.A.
INTER-OFFICE CORRESPONDENCE

RICHMOND, VIRGINIA

To: . Mr. L. F. Meyer

Date: July 27, 1970

From: . L. L. Long

Subject: . Forthcoming Ecusta Visit.

Attached is a copy of the slides which Mr. W. F. Owens, Jr. intends to show during his forthcoming visit.

/ad

cc: Mr. R. N. Thomson
Mr. J. S. Osmalov

Attachment:

C70-03550

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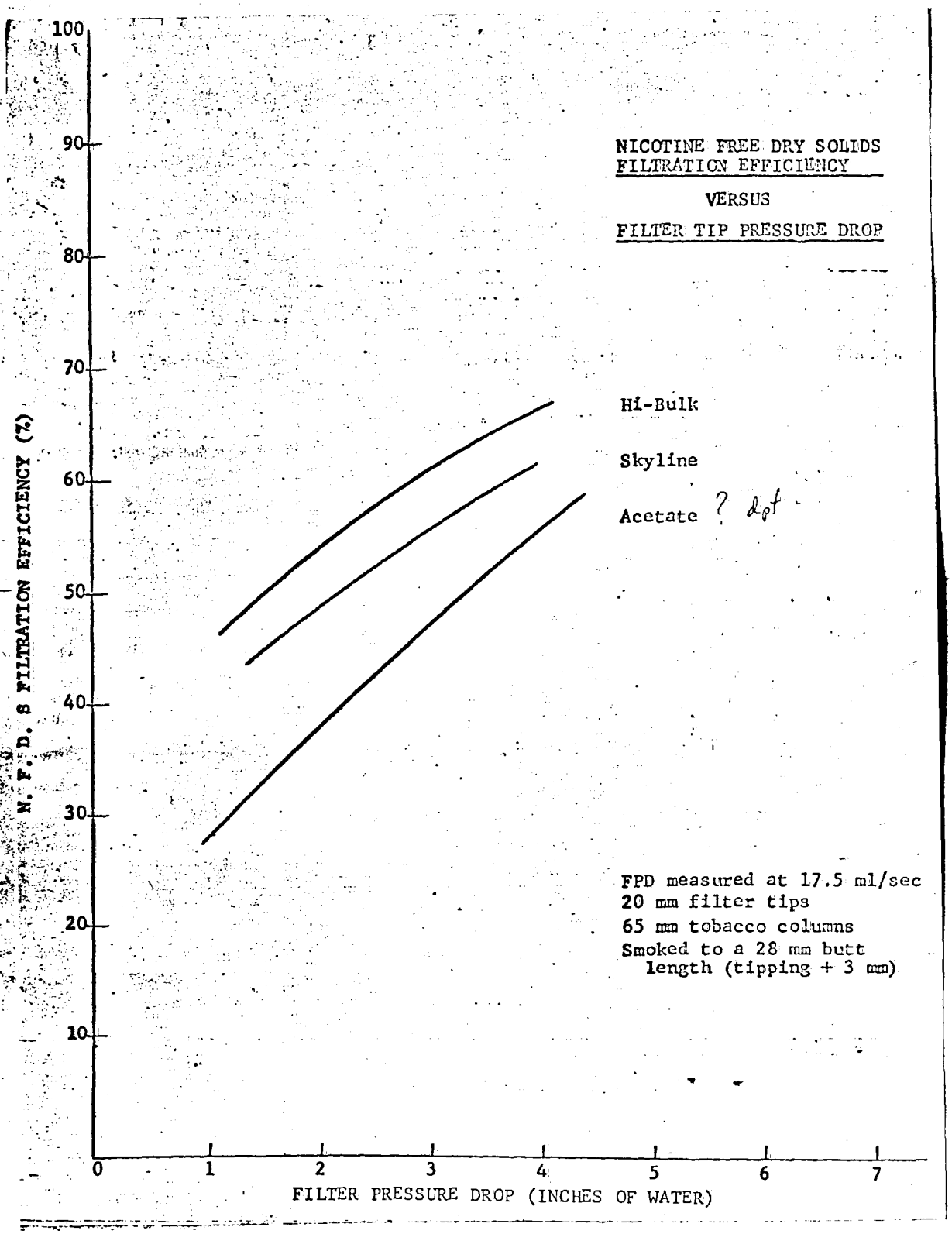
Source: https://www.industrydocuments.ucsf.edu/docs/pzgk0000



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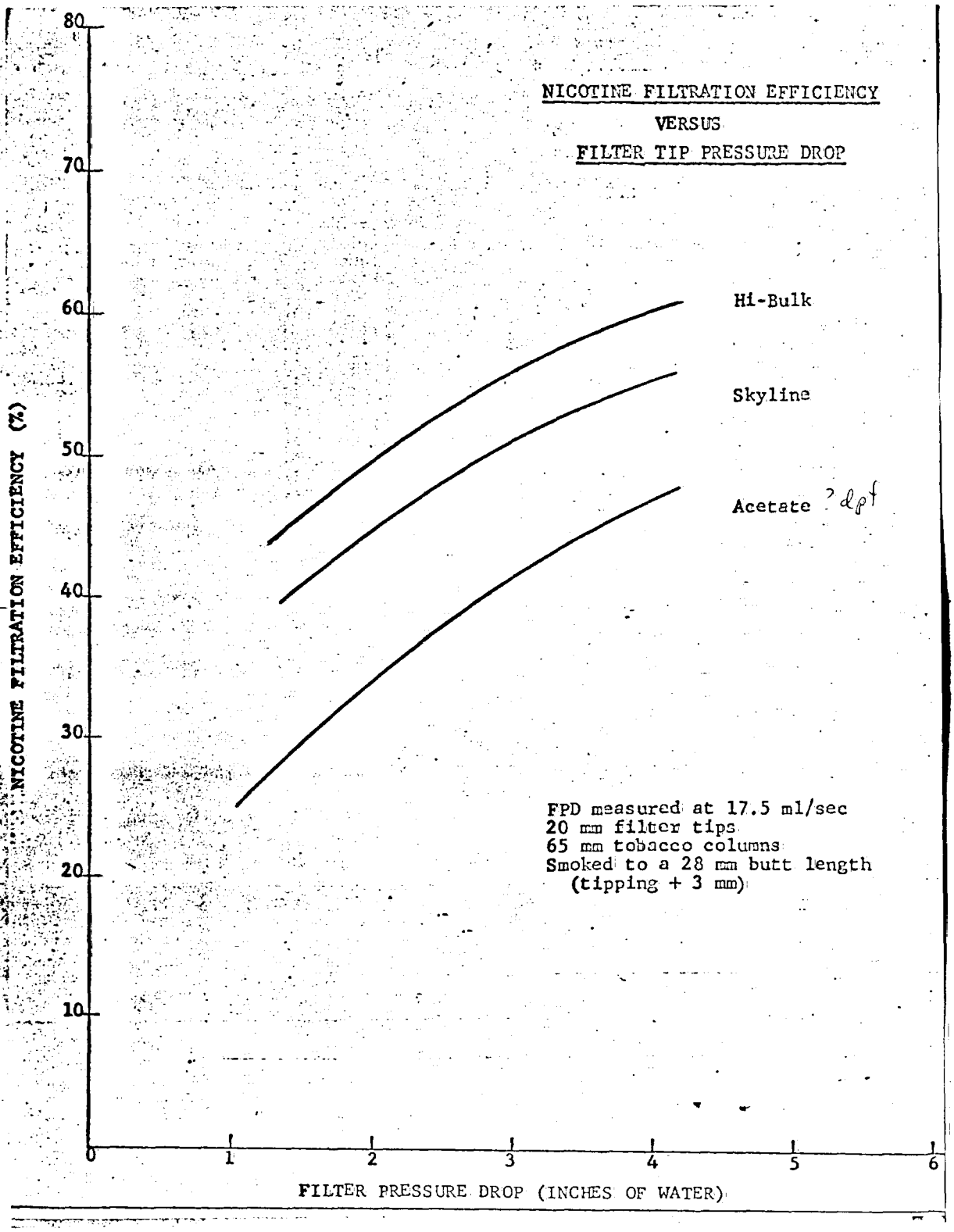

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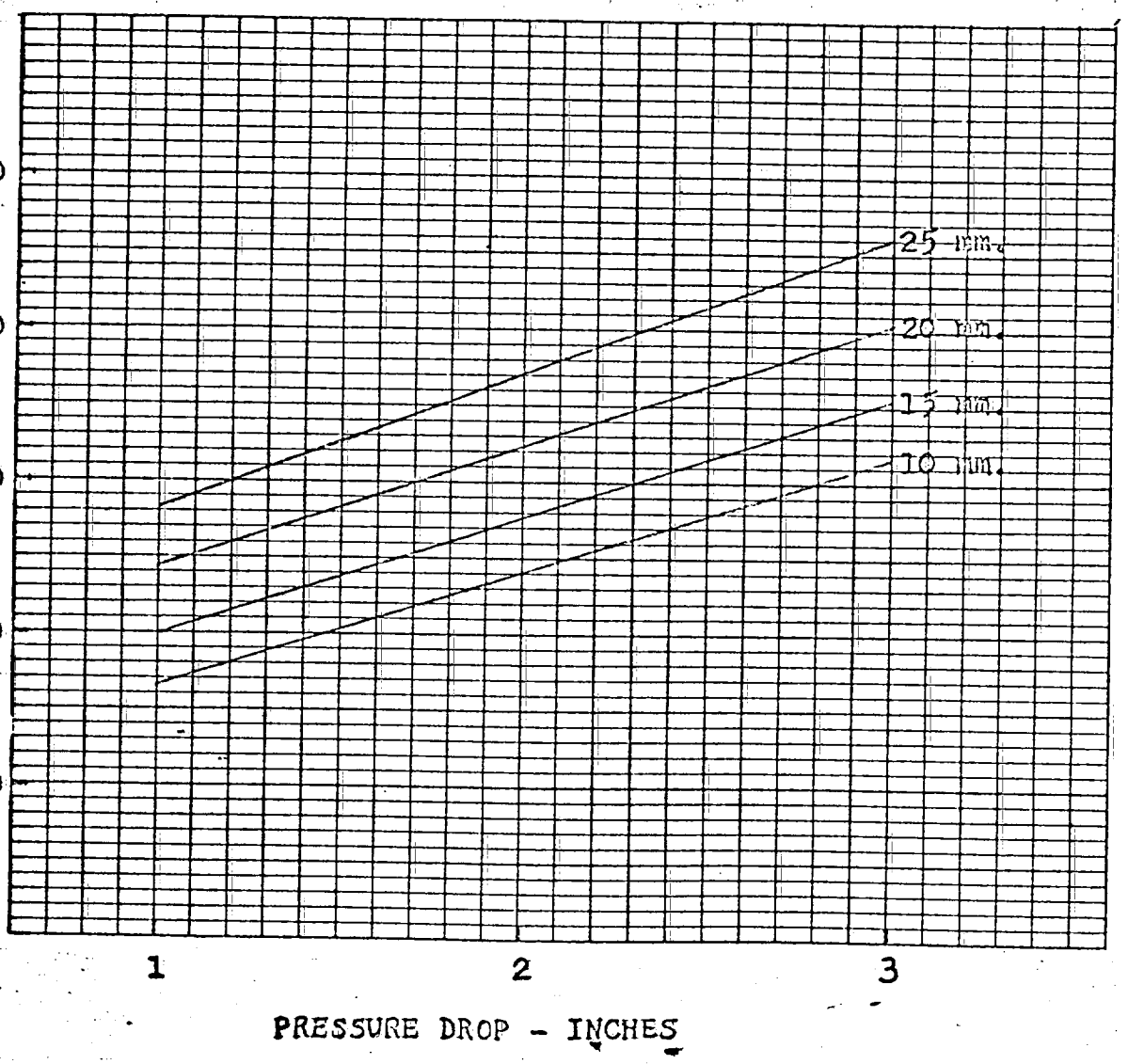
SKYLINE PAPER FILTERS

FILTRATION EFFICIENCY VERSUS PRESSURE DROP



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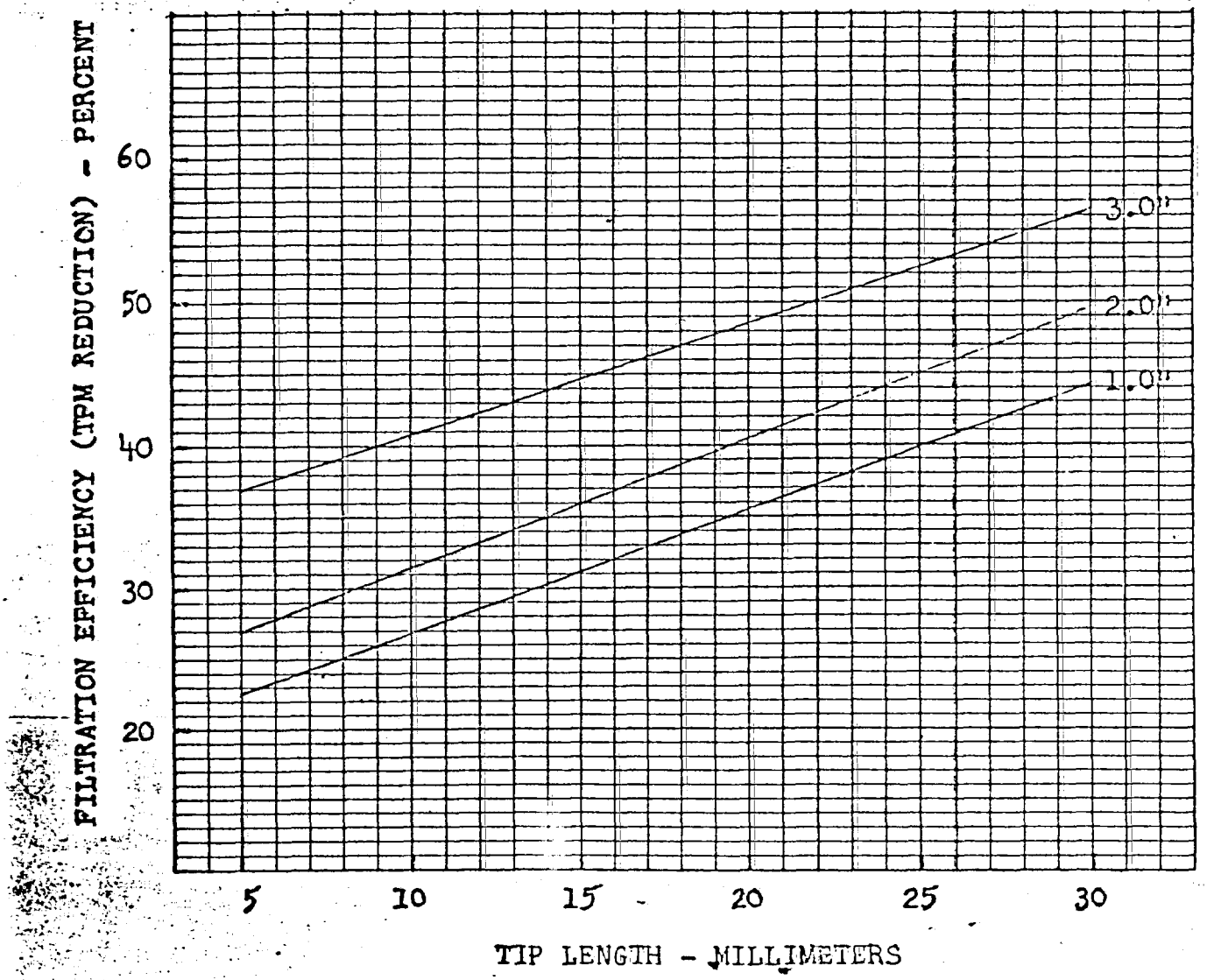
SKYLINE PAPER FILTERS

FILTRATION EFFICIENCY VERSUS TIP LENGTH



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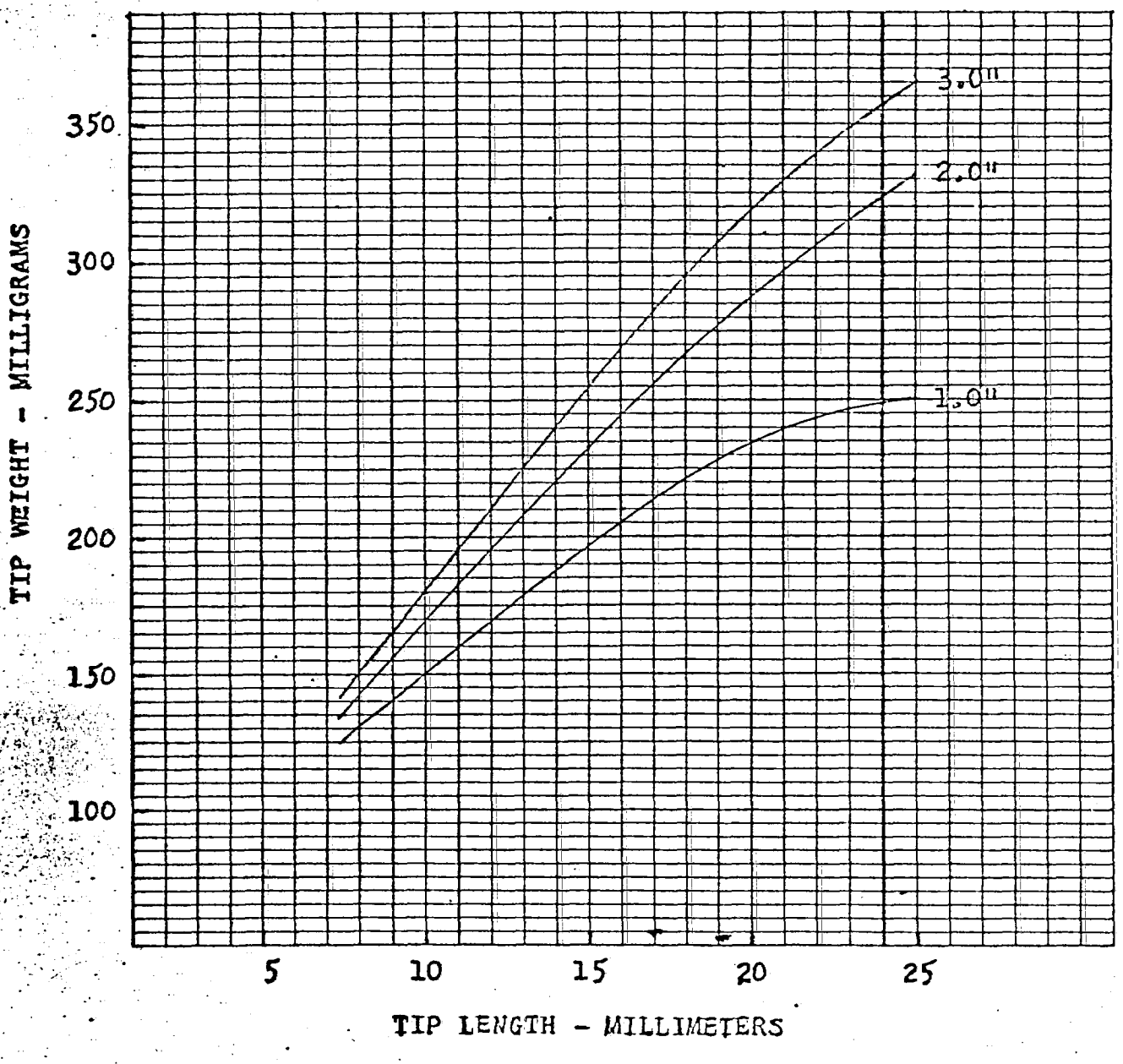
SKYLINE PAPER FILTERS

TIP WEIGHT VERSUS TIP LENGTH



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PHENOL AND WET PARTICULATE YIELDS

Filter (1)	Phenol (ugs.)	Phenol Reduction (%)	TPM (Wet) (mg./cig.)	TPM (Wet) Reduction (%)
Control (No Filter)	159	-	47.0	-
Acetate	30	81	29.5	37
Skyline	29	82	24.5	48
Hi-Bulk	72	55	22.5	52
Hi-Bulk (Specially Treated)	29	82	24.0	49

(1) 20 mm filter tips had an average pressure drop of 2.0 inches.

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Reduction of Hydrogen Cyanide in Cigarette Smoke Versus Specially Treated Skyline and Activated Charcoal-Paper Filters

Sample	Filter Tip Length (1)	Micrograms HCN/cig.	% HCN Reduction
Control (2)	-	238	-
Untreated Skyline	20 mm	226	5
Treated Skyline (3)	20 mm	222	7
	10 mm	222	7
Specially Treated (3) Skyline for HCN Reduction (TOD 3206)	20 mm	20	92
	10 mm	36	85
TOD 3162 (4)	10 mm	114	52
TOD 3205 (5)	10 mm	59	75

(1) 20 mm filter tips selected to have a pressure drop of 2.0-2.1 inches of water.
10 mm filter tips selected to have a pressure drop of 1.0-1.1 inches of water except where noted.

(2) Cigarette without filter.

(3) 80 to 90% phenol reduction obtained with 20 mm tips.

(4) 29 mg. charcoal/10 mm tip with a pressure drop of 0.8 inches of water.

(5) 23 mg. charcoal/10 mm tip with a pressure drop of 0.8 inches of water.

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Total Particulate Filtration Efficiency and Weight of Paper and Acetate Filters
(24.6 mm x 20 mm Filter Tips, 1.7" Pressure Drop)

	Weight (mg/20 mm filter)	% Filtration Efficiency
Skyline	258 mg	45.5
TOD 3162 (30/36)	219 mg	45.9
TOD 3193 (62/36)	229 mg	51.2
Hi Bulk	138 mg	51.4
Acetate (5 dpt/44,000 TD)	160 mg	32.0

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Per Cent Reduction of Total Organic Vapor Phase Versus Different Activated Charcoal Filter Tips (1)

Sample	% TOVP Reduction
TOD 3192 (2)	28.2
TOD 3162 (3)	33.7
TOD 3193 (4)	38.2
(Wide Spectrum Activated (5) (Charcoal Paper Filter	30.5
(Granular Activated (6) (Charcoal Cavity Filter	24.3

doesn't make sense with following Table

(Same tobacco column without filter used as control)

(1) All filter tips except commercial activated charcoal cavity filter were of 10 mm length with a pressure drop of 0.8 inches of water.

(2) 23 mg. charcoal/10 mm tip

(3) 29 mg. charcoal/10 mm tip

(4) 55 mg. charcoal/10 mm tip

(5) 25 mg. charcoal/10 mm tip

(6) 110 mg. charcoal/tip

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Yield of Major Organic Vapor Phase Components Versus Different Activated Charcoal Filter Tips (1)

Yield (mg./cig.)

Component	TOD 3192 (2)	TOD 3193 (3)	Granular Activated (4) Charcoal Cavity Filter
Isoprene	0.23	0.15	0.19
Acetaldehyde	0.68	0.52	0.65
Acetone	0.23	0.21	0.22
Methanol	0.00	0.00	0.00
Methyl Furan	0.014	0.011	0.014
Methyl Ethyl Ketone	0.04	0.04	0.04
Furan	0.020	0.016	0.018
Propionaldehyde	0.029	0.022	0.036
Acrolein	0.038	0.028	0.036
Methyl Acetate	0.013	0.007	0.010
Isobutyraldehyde	0.011	0.009	0.011

(1) All filter tips except commercial activated charcoal cavity filter were of 10 mm length with a pressure drop of 0.8 inches of water.

(2) 23 mg. charcoal/10 mm tip

(3) 55 mg. charcoal/10 mm tip

(4) 110 mg. charcoal/tip what type & mesh size carbon

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Yield of Major Organic Vapor Phase Components Versus Different Activated Charcoal Filter Tips (1)

Yield (mg./cig.)

Component	TOD 3192 (2)	Wide Spectrum Activated (3) Charcoal Paper Filter
Isoprene	0.23	0.41
Acetaldehyde	0.68	0.78
Acetone	0.23	0.35
Methanol	0.00	0.00
Methyl Furan	0.014	0.021
Methyl Ethyl Ketone	0.04	0.05
Furan	0.020	0.027
Propionaldehyde	0.029	0.044
Acrolein	0.038	0.058
Methyl Acetate	0.013	0.014
Isobutyraldehyde	0.011	0.013

(1) All filter tips were of 10 mm length with a pressure drop of 0.8 inches of water.

(2) 23 mg. charcoal/10 mm tip

(3) 25 mg. charcoal/10 mm tip

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Yield of Major Organic Vapor Phase Components Versus Different Activated Charcoal Filter Tips (1)

Yield (mg./cig.)

Component	Control (2)	TOD 3192 (3)	TOD 3193 (4)
Isoprene	0.52	0.23	0.15
Acetaldehyde	1.01	0.68	0.52
Acetone	0.54	0.23	0.21
Methanol	0.08	0.00	0.00
Methyl Furan	0.030	0.014	0.011
Methyl Ethyl Ketone	0.12	0.04	0.04
Furan	0.032	0.020	0.016
Propionaldehyde	0.066	0.029	0.022
Acrolein	0.092	0.038	0.028
Methyl Acetate	0.020	0.013	0.007
Isobutyraldehyde	0.026	0.011	0.009

(1) All filter tips were of 10 mm length with a pressure drop of 0.8 inches of water.

(2) No filter

(3) 23 mg. charcoal/10 mm tip

(4) 55 mg. charcoal/10 mm tip

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Source: https://www.industrydocuments.ucsf.edu/docs/pzgk0000

HCN REDUCTION OF DIFFERENT CIGARETTE FILTERS

Filter (1)	HCN (µgs.)	Per Cent Reduction
Control (No Filter)	287	-
Acetate	217	24
Skyline	240	16
Skyline (Specially Treated)	37	87
Hi-Bulk	231	20
Hi-Bulk (Specially Treated)	32	89

(1) 20 mm filter tips had an average pressure drop of 2.0 inches.

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Source: https://www.industrydocuments.ucsf.edu/docs/xmy00000